

Introduction on PTR22_24 Project 1.2 concerning Thermal Energy Storage

Raffaele LIBERATORE - *ENEA*

The main objectives concern the possibility of greater exploitation of renewable resources to save primary energy and relieve the electricity grid of this contribution to decarbonization. These can be summarized in obtaining smaller dimensions with the same accumulated energy, greater stability and cyclability of materials and the search for an effective alignment between charging and discharging times with the process to which you want to couple, without neglecting the economic/environmental aspect. The project has been analysing aspects related to thermal storage from 0 to 900 °C by prototype designs, materials development, experimental campaigns, numerical modelling, and SW building. It deepened technologies including power cycle integration, sensible, latent, and thermochemical storage exploitation, and large underground water systems.

Acknowledgments

This work was funded by the Italian Ministry of Environment and Energy Security through the «National Electric System Research» Programme (RdS) – Integrated Project 1.2 “Electrochemical and thermal storage technologies”, 2022-2024 implementation plan.